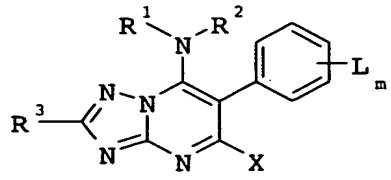
We claim:

1. A 2-substituted triazolopyrimidine of the formula I



I

in which the substituents are as defined below:

L independently of one another are halogen, cyano, nitro, C_1-C_6-alkyl, C_2-C_{10}-alkenyl, C_2-C_{10}-alkynyl, C_1-C_6-haloalkyl, C_2-C_{10}-haloalkenyl, C_1-C_6-alkoxy, C_2-C_{10}-alkenyloxy, C_2-C_{10}-alkynyloxy, C_1-C_6-haloalkoxy, -C(=O)-A or $S(=O)_pA'$;

A is hydrogen, hydroxyl, C_1-C_8-alkyl, C_2-C_8-alkenyl, C_1-C_8-alkoxy, C_1-C_6-haloalkoxy, C_1-C_8-alkylamino or di-(C_1-C_8-alkyl)amino;

A' is hydrogen, C_1-C_8-alkyl or C_1-C_6-haloalkyl;

p is 0, 1 or 2;

m is 0, 1, 2, 3, 4 or 5;

X is cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_2-haloalkoxy;

R^1,R^2 independently of one another are hydrogen, C_1-C_8-alkyl, C_1-C_8-haloalkyl, C_3-C_6-cycloalkyl, C_3-C_6-halocycloalkyl, C_2-C_8-alkenyl, C_4-C_{10}-alkadienyl, C_2-C_8-haloalkenyl, C_3-C_6-cycloalkenyl, C_2-C_8-alkynyl, C_2-C_8-haloalkynyl or C_3-C_6-cycloalkynyl, phenyl, naphthyl, or a five- to ten-membered saturated, partially unsaturated or aromatic heterocycle which contains one to four heteroatoms from the group consisting of O, N and S,

R^1 and R^2 together with the nitrogen atom to which they are attached may also form a five- or six-membered ring which may be interrupted by an atom from the group consisting of O, N and S and/or may carry one or more substituents from the group consisting of halogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl and oxy-C_1-C_3-alkyleneoxy

or in which a nitrogen atom and an adjacent carbon atom may be linked by a C_1-C_4-alkylene chain;

where R^1 and/or R^2 may be substituted by one to four identical or different groups R^a:

R^a is halogen, cyano, nitro, hydroxyl, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkylcarbonyl, C_3-C_6-cycloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkoxycarbonyl, C_1-C_6-alkylthio, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, C_2-C_6-alkenyl, C_2-C_6-alkenyloxy, C_3-C_6-alkynyloxy, C_3-C_6-cycloalkyl, phenyl, naphthyl, a five- to ten-membered saturated, partially unsaturated or aromatic heterocycle which contains one to four heteroatoms from the group consisting of O, N and S,

where these aliphatic, alicyclic or aromatic groups for their part may be partially or fully halogenated or may carry one to three groups R^b:

R^b is halogen, cyano, nitro, hydroxyl, mercapto, amino, carboxyl, aminocarbonyl, aminothiocarbonyl, alkyl, haloalkyl, alkenyl, alkenyloxy, alkynyloxy, alkoxy, haloalkoxy, alkylthio, alkylamino, dialkylamino, formyl, alkylcarbonyl, alkylsulfonyl, alkylsulfoxyl, alkoxycarbonyl, alkylcarbonyloxy, alkylaminocarbonyl, dialkylaminocarbonyl, alkylaminothiocarbonyl, dialkylaminothiocarbonyl, where the alkyl groups in these radicals contain 1 to 6 carbon atoms and the alkenyl or alkynyl groups in these radicals contain 2 to 8 carbon atoms;

and/or one to three of the following radicals:

cycloalkyl, cycloalkoxy, heterocyclyl, heterocyclyloxy, where the cyclic systems contain 3 to 10 ring members; aryl, aryloxy, arylthio, aryl–C_1–C_6–alkoxy, aryl–C_1–C_6–alkyl, hetaryl, hetaryloxy, hetarylthio, where the aryl radicals preferably contain 6 to 10 ring members and the hetaryl radicals 5 or 6 ring members, where the cyclic systems may be

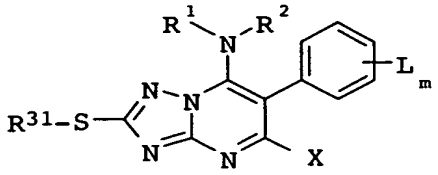
partially or fully halogenated or substituted by alkyl or haloalkyl groups; and

R^3 is cyano, hydroxyl, C_1-C_8-alkoxy, C_3-C_8-alkenyloxy, C_1-C_8-haloalkoxy, C_3-C_8-haloalkenyloxy, NR^1R^2 or $S(O)_nR^{31}$;

n is 0, 1 or 2;

R^{31} is hydrogen, hydroxyl, C_1-C_8-alkyl, C_2-C_8-alkenyl or -C(=O)-A.

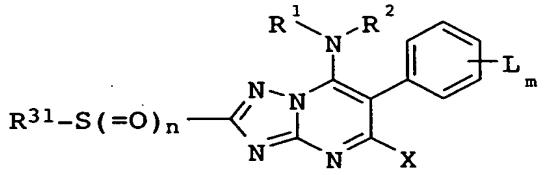
2. A compound of the formula I.1,



I.1

in which the variables and the index m are as defined for formula I as claimed in claim 1.

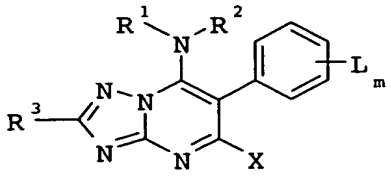
3. A compound of the formula I.2 or I.3,



I.2: n=2
I.3: n=1

in which the variables and the index m are as defined for formula I as claimed in claim 1.

4. A compound of the formula IA,



IA

in which

R^3 is cyano, hydroxyl, C_1-C_8-alkoxy, C_3-C_8-alkenyloxy, C_1-C_8-haloalkoxy, C_3-C_8-haloalkenyloxy or NR^1R^2;

and R^1, R^2, X and L_m are as defined for formula I according to claim 1.

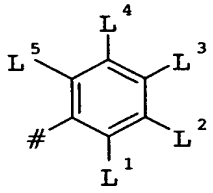
5. A compound of the formula I as claimed in any of claims 1 to 4, in which R^1 and R^2 are as defined below:

R^1 is C_1-C_6-alkyl, C_1-C_8-haloalkyl, C_3-C_6-cycloalkyl, C_3-C_6-halocycloalkyl, C_2-C_8-alkenyl, C_2-C_8-haloalkenyl, C_2-C_8-alkynyl; and

R^2 is hydrogen or C_1-C_4-alkyl; or

R^1 and R^2 together with the nitrogen atom to which they are attached may also form a five- or six-membered saturated or unsaturated ring which may carry one or two substituents from the group consisting of halogen, C_1-C_6-alkyl and C_1-C_6-haloalkyl.

6. A compound of the formula I as claimed in any of claims 1 to 5, in which the phenyl group substituted by L_m is the group A

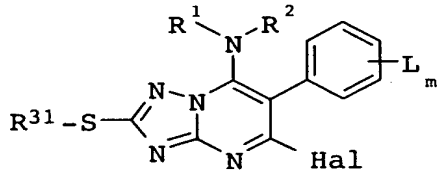


A

in which # is the point of attachment to the triazolopyrimidine skeleton and

L^1 is fluorine, chlorine, CH_3 or CF_3;
L^2,L^4 independently of one another are hydrogen or fluorine;
L^3 is hydrogen, fluorine, chlorine, cyano, CH_3, SCH_3, OCH_3, SO_2CH_3 or $COOCH_3$ and
L^5 is hydrogen, fluorine or CH_3.

7. Process for preparing the compounds of the formula I.1, as claimed in claim 2, in which X is cyano, C_1–C_4–alkoxy or C_1–C_2–haloalkoxy, by reacting compounds of the formula II



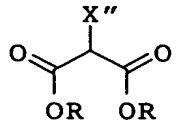
II

in which Hal is a halogen atom with compound M-X'

M-X' III

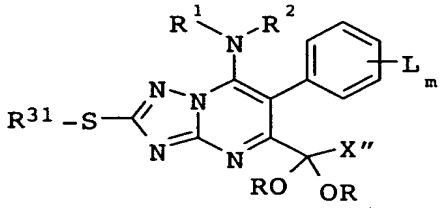
in which M in formula III is an ammonium, tetraalkylammonium or alkali metal or alkaline earth metal and X' is cyano, C_1–C_4–alkoxy or C_1–C_2–haloalkoxy.

8. A process for preparing the compounds of the formula I.1 as claimed in claim 2 in which X is C_1-C_4-alkyl, by reacting compounds II as set forth in claim 7 and malonates of the formula IV,



IV

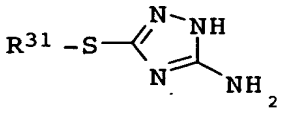
in which X" is hydrogen or C_1-C_3-alkyl and R is C_1-C_4-alkyl to give compounds of the formula V



V

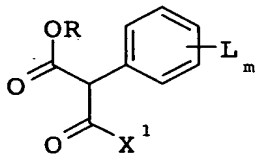
and hydrolysis of V and decarboxylation.

9. A process for preparing the compounds of the formula I.1 as claimed in claim 2 in which X is C_1-C_4-alkyl or C_1-C_4-haloalkyl, by reacting triazoles of the formula VI



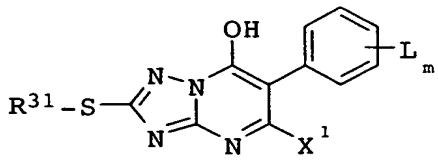
VI

with dicarbonyl compounds of the formula VII,



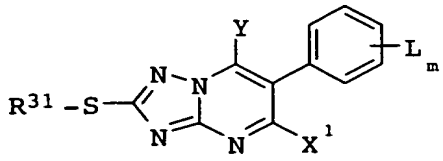
VII

in which R and X^1 are C_1-C_4-alkyl or C_1-C_4-haloalkyl, to give hydroxytriazolopyrimidines of the formula VIII,



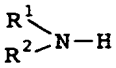
VIII

halogenation of VIII to give compounds of the formula IX



IX

in which Y is halogen, in particular chlorine or bromine, and reaction of IX with amines of the formula X,



X

in which R^1 and R^2 are as defined in claim 1.

10. A process for preparing compounds of the formula I.1 as claimed in claim 2, in which X is C_1–C_4–alkyl, by reacting halogen compounds of the formula II as set forth in claim 7 with organometallic reagents of the formula XI

$$M^Y(-X)_y \qquad \text{XI}$$

in which M is B, Zn or Sn, X is C_1–C_4–alkyl and y corresponds to the valency of M.

11. A process for preparing compounds of the formula I.2 as claimed in claim 3 by oxidizing compounds of the formula I.1 as claimed in claim 2.

12. A process for preparing compounds of the formula IA as claimed in claim 4, by reacting compounds of the formula I.2 as claimed in claim 3 in which n = 2 with compounds of the formula XII

$$R^3\text{-}M \qquad \text{XII}$$

in which M is an ammonium, tetraalkylammonium, alkali metal or alkaline earth metal cation and R^3 is as defined for formula IA, under basic conditions.

13. A composition suitable for controlling harmful fungi, which composition comprises a solid or liquid carrier and a compound of the formula I as claimed in claim 1.

14. A method for controlling phytopathogenic harmful fungi, which method comprises treating the fungi or the materials, plants, the soil or seeds to be protected against fungal attack with an effective amount of a compound of the formula I as claimed in claim 1.